The writer has visited a salt marsh near Lincoln, Nebraska, which is also supplied from Dakota shales, which Prof. Hicks, the State Geologist, informs me belong to the middle of the series; and he also says that salt recently found by the drill at Hastings is at the bottom of the Dakota. It appears, then, that the Dakota must be added to the number of those rock series that are rightly termed saliferous. Perhaps the fact that the Dakota lignite and the Dakota dicotyledonous leaves indicate much land near marine deposits might have led us to infer shallow marine waters and possible salt deposits. The actual recognition of the salt shales justifies such inference, and is another fact in the physiography of the Dakota time. Possibly salt licks and salt marshes in other parts of the plains region may hereafter be recognized as belonging to the same Dakota horizon.

The plate and figure are from a longer article, on the "Geology of Kansas Salt," in the Seventh Biennial Report of the State Board of Agriculture.

ON THE STRUCTURE OF THE KANSAS CHALK.

BY S. W. WILLISTON.

In January, 1882, Mr. (now Dr.) W. S. Bunn, a student of Kansas University, published in the Lawrence (Kans.) *Home Journal*, a brief notice of organic remains occurring in the Kansas chalk. The means at his command did not enable him to clearly discern the objects, but his description renders it certain that he had detected coccoliths, though mistaken in his supposition as to their nature and origin.

That the chalk should be structureless, as had been previously believed by Professor Patrick, was hardly to be expected, and an examination confirms Dr. Bunn's statement of the organic origin of the material. That I did not give Dr. Bunn credit for first recognizing its organic nature, in a notice recently published by me in *Science*, is due to the fact that I have only become cognizant of his communication at the present writing.

The deposit seems wholly formed of coccoliths, rhabdoliths, and foraminifera, with, perhaps, radiolarians and sponges. The coccoliths exist as complete, or broken oval, or circular bodies from $\frac{1}{3500}$ to $\frac{1}{4500}$ of an inch in diameter, with from one to six depressions, or nuclei; the rhabdoliths as slender spicules, rarely attached to a central mass, or as rarely with a trumpet-shaped extremity. In addition there are other, less slender rods, from $\frac{1}{1000}$ to $\frac{1}{2000}$ of an inch in length, that *may* be radiolarian spicules. I have recognized at least a dozen forms of foraminifera, the one most common and conspicuous very similar to, if not identical with, a *Textilaria* of the English chalk.

A ready method of examining the material is to allow a thin film held in suspension in water to dry upon a slide, afterward mounting in balsam.

To obtain the heavier foraminifera, successive portions should be decanted from the vessel containing the powdered chalk disseminated in water, using the residue for examination.

In view of the foregoing facts, it seems to be time that the assertions of some of our leading text-books (*e. g.*, Winchell, Geological Studies, p. 433, and Leconte, Elements, p. 473) that there is no chalk in America, should be corrected.